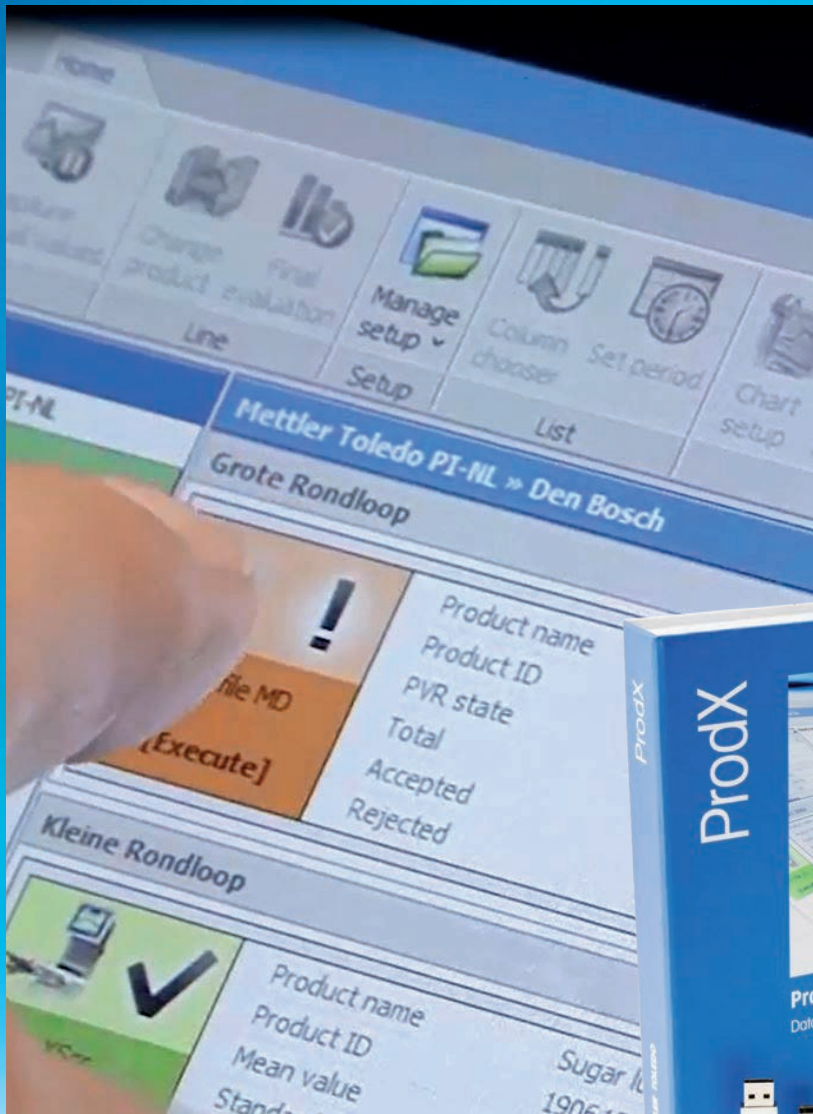


Product Inspection

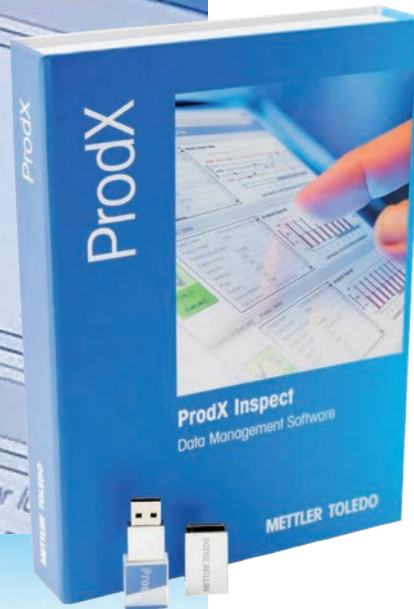


ProdX

Quality and Compliance

Data Communication

Production and Efficiency



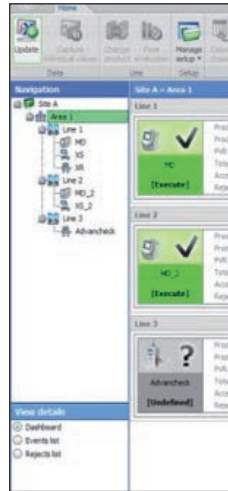
Quality and Production Data Management
Improving Efficiency, Productivity and Control

METTLER TOLEDO

Complete Data Control

Maximizing Operational Efficiency Through Digitalization

ProdX is a PC-based client server solution which monitors and manages data collected from METTLER TOLEDO product inspection devices. It supports and maximizes rigorous quality control regimes, drives production optimization, and simplifies production line operation.



Helping you manage Quality and Compliance

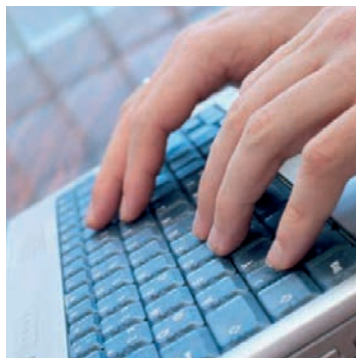
ProdX empowers Quality Managers to actively take control of business critical quality requirements and meet global and local compliance needs. It significantly cuts administrative effort in reporting on compliance for all current food safety standards and retailer audit requirements.

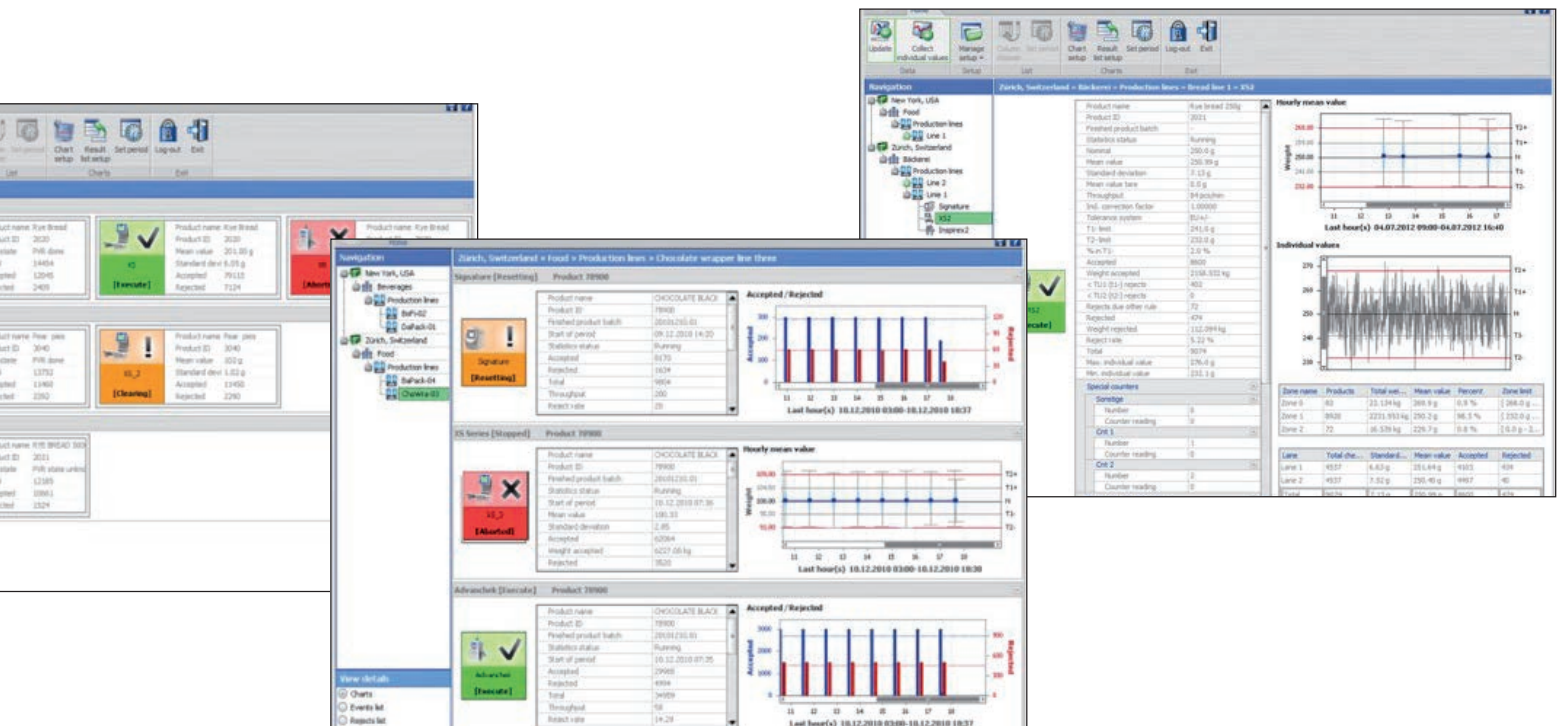
Helping you manage Data Communication

ProdX provides IT Managers with a data network connectivity solution designed to keep pace with the latest technological advances. Its full integration capability with MES/ERP systems, using the latest communication protocols, eases maintenance requirements and fully supports smart factory initiatives.

Helping you manage Production and Efficiency

ProdX enables Production Managers to maximize process efficiency and increase productivity. It significantly reduces complexity and sources of error caused by multiple operating systems and proprietary machine software.





Benefits of ProdX

Quality and Production Data Management

Enables Industry 4.0 Smart Factories

Digitalization and standard data transfer connectivity protocols are key to keeping pace with technological developments in big data analysis. Combining standardized data across multiple sites at local and enterprise levels enables business transformations and future orientated production processes.

Data Visibility

Quality and production data can be accessed remotely across multiple site and geographical locations, giving managers at all levels complete insight into product inspection and compliance performance metrics.

Improved Efficiency and Productivity

Data is instantly available. Time spent searching for quality and production data is reduced. Studies indicate that managers can spend 25% to 35% of their time searching for, retrieving, handling, filing, and storing documents and information. Repetitive manual processes are significantly reduced.

Improved Control

Improved data management assures that everyone is working from the most current data. Access controls assure that only authorized parties can access or change proprietary information. Control over production parameter changes are improved with less manual effort.



Data and Process Management For Quality, Production and IT Managers

Quality Management

ProdX manages all the data and documentation requirements of Quality Managers by:

- Allowing immediate access to all the data required to demonstrate compliance with national and international laws/standards
- Fully supporting the fulfilment of retailer audits
- Enabling quicker and more targeted reaction to quality incidents.
- Reducing the manual effort required to document quality incidents and the remedial actions taken
- Simplifying and speeding up the collection and compilation of data from multiple production line systems

ProdX captures all quality relevant data from multiple product inspection technologies to completely log and document all events and actions. This supports the Quality Manager through automation of time intensive manual processes.



Production Management

ProdX gives Production Managers unparalleled insight into production line performance data to exploit untapped potential for efficiency gains:

- Allowing the OEE status to be tracked and evaluate the production values to maintain and improve levels
- Centralized execution of manual product changeover processes to cut down sources of human error and reduce downtime
- Providing the highest levels of data integrity and production security
- Enabling quicker and more targeted reaction to production incidents and access to historical big data for trend analysis
- Simplifying and speeding up the collection and compilation of data from multiple production line systems
- Keeps up-to-date with emerging production automation standards such as PackML

ProdX is a central database of all production data. It provides event logs, giving a complete real-time and historical overview of all production data and machine operation, status and performance. Automated processes enable timely warnings or alarms about production relevant incidents.



IT Management

ProdX aids IT Managers to integrate multiple product inspection technologies and devices seamlessly into site networks with minimal time and effort:

- Allowing instant connectivity for full data visibility and functional control of all future METTLER TOLEDO product inspection devices
- Removes the requirement for costly MES/ERP modifications to take full advantage of the available inspection device data
- Ensuring high levels of IT security and data integrity
- Supporting smart factory, Industry 4.0 and IIoT (Industrial Internet of Things) integration projects using OPC UA, especially for connecting legacy hardware devices
- Continuous further development to meet new security requirements and new IT environments

The different installation models allow network administrators the maximum flexibility to integrate ProdX into the widest range of known network infrastructures and simplifies machine connectivity issues.



Metal Detection

Checkweighing

X-ray Inspection

Vision Inspection

Supported Devices

ProdX supports more than 30 models of METTLER TOLEDO's metal detection, checkweigher, x-ray and vision inspection and combination systems - from legacy devices up to the newest and all future generations.



Metal Detection

Tunnel: Profile Advantage, PowerPhasePRO, PowerPhasePRO RB, Profile, Signature Touch, Signature

Gravity Fall: Y Valve, Sealrite, Open Diverter

Throats: T Series, ST Series

Pipeline: PowerPhasePRO, HDS, Profile Advantage

Pharma: Tablex-PRO, Tablex2, Pharma GF-PRO

Checkweighing

C-Series: C21, C23, C31, C33, C35, C1200

X-Series: XS, XE, XD, XC

X-ray Inspection

X3000 Series: X33, X34, X36, X37, X38, X39

InspireX, InspireX2

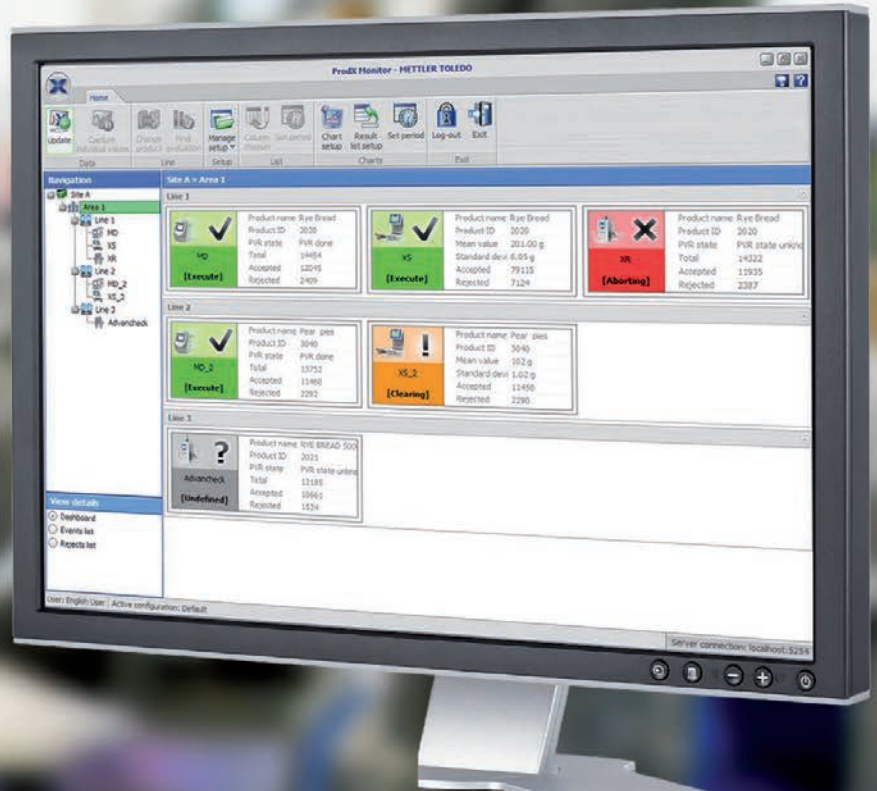
AvanChek

Vision Inspection

All product models using the CIV-Core 11 or newer software

The models named above may not be a complete list of models compatible with ProdX - if you don't see your model listed, please contact us find out if your system is compatible.

All systems require an Ethernet port to connect to ProdX (upgrades are available for older systems already installed that are not equipped).



Supporting Regulatory Compliance

The monitoring and record keeping functionality of ProdX is compliant with all current food safety standards, legislation and regulations. ProdX automatically records all equipment testing routines, all rejected items and all quality relevant incidents.

It allows entry of the root cause of an incident to fully document when each event took place, and the remedial action taken to resolve the issues. This data is available for archiving and printing in standard report formats. All report formats are in accordance with regulation and audit requirements and not only prove compliance, they also demonstrate due diligence.

ProdX keeps up-to-date with emerging standards, future-proofing your production line and maintaining compliance.

ProdX supports the following international compliance standards:

- IFS
- SQF
- BRC
- OIML
- FSSC22000
- HACCP
- HARPC
- FPVO
- MID

Sample Standards

BRC8 Clause 4.10.1.4

Where foreign material is detected or removed by the equipment, the source of any unexpected material shall be investigated. Information on rejected materials shall be used to identify trends and where possible, instigate preventative action to reduce the occurrence of contamination by the foreign material.

BRC8 Clause 2.10.1

A monitoring procedure shall be established for each CCP to ensure compliance with critical limits. The monitoring system shall be able to detect loss of control of CCPs and wherever possible, provide information in time for corrective action to be taken. As a guide, consideration may be given to the following, although this is not an exhaustive list:

- Online measurement
- Offline measurement
- Continuous measurement (e.g. thermographs, pH meters etc.)

Where discontinuous measurement is used, the system shall ensure that the sample taken is representative of the batch of product.

BRC8 Clause 4.10.3.3

The site shall establish and implement procedures for the operation and testing of the metal detection or x-ray equipment. This shall include as a minimum:

- Responsibilities for the testing of equipment
- The operating effectiveness and sensitivity of the equipment and any variation to this for particular products
- The methods and frequency of checking the device recording of the results of checks

Installation Models

The choice of options depends on the site network infrastructure, quality control and production requirements. There is never a wrong decision as ProdX has been designed to grow with you to match your ever changing production needs.

ProdX has two simple installation models:

Starter Pack	The Starter Pack is quick and easy to set up and deploy using a single PC (integration to MES, email servers, SQL servers or image storage is not included). It is ideal for simple network infrastructures in small sites.	1 device and 5 user licenses (up to max 10 devices and 100 users)
Base Pack	The Base Pack includes all features available. It is ideal for medium to large network infrastructures and allows direct connection to MES and ERP systems. The additional features and functionality allows maximum data storage capability, the greatest levels of reporting flexibility and real-time notifications of alerts and alarms on mobile devices.	2 devices and 10 user licenses (up to max 200 devices and 3000 users)

Additional Options (Base installation only):

- MES/ERP interface (OPC UA Server)
- 100% individual data
- Report template designer



Service and Support

Our service experts are there to assist you with set-up or operational issues. We can provide support and technical assistance via remote methods such as telephone, email, and remote connection tools to minimize the disturbance of normal business processes. We also offer on-site support for hands-on assistance to ensure proper software and system operation and for supervisor and user familiarization with all the functions of the software.

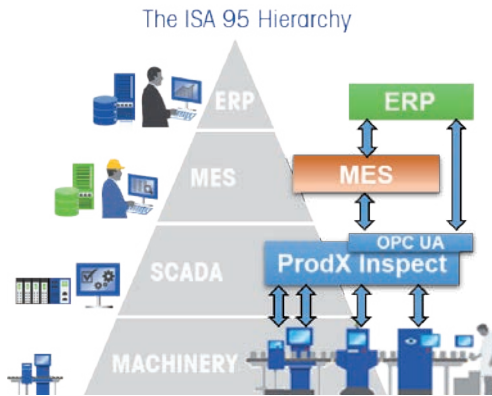
Standard Features	Starter Pack	Base Pack	QM*	PM*	IT*
Complete line and device overview dashboard <ul style="list-style-type: none"> Condensed overview of all lines in area Real-time state of your critical control points (CCPs) Drill down to the single device view Accept / Reject chart for production output trends Display individual device OEE 	•	•			
Collecting and storing of counters and statistics <ul style="list-style-type: none"> Automatic documentation of fill quantities to comply with legislation Hourly mean trend chart with standard deviation Checkweighing giveaway calculation 	•	•			
Monitoring of CCPs <ul style="list-style-type: none"> Supports your HACCP program: <ul style="list-style-type: none"> View remotely if your product inspection devices are working Logs any early warnings or alarms Logs the product or parameter changes on the inspection device Documentation of performance tests of the metal detectors and x-ray systems for food safety and audit demands: <ul style="list-style-type: none"> Test user and results including sample material and sample size, as well as device sensitivity settings 	•	•			
Document incidences, reason and corrective actions <ul style="list-style-type: none"> Entry of reason for the incident and a corrective action from a dropdown list or custom text Creation of predefined lists of: <ul style="list-style-type: none"> Reject reasons and corrective actions Alarm reasons and corrective actions Warning reasons and corrective actions 	•	•			
Management of product or batch changeover <ul style="list-style-type: none"> Central / remote product or batch changeover for all inspection devices in a line Trigger a product or batch changeover at one 'Master Device' within the production line 	•	•			
Management of checkweigher and metal detector parameter set-ups <ul style="list-style-type: none"> Product set-ups are automatically uploaded and stored centrally View and maintain product set-up parameters centrally Maintain one set of common parameters for multiple lines 	•	•			
Standard reports <ul style="list-style-type: none"> Printing and exporting reports is simple and fast in 15 file formats 28 standard report templates available 	•	•			
Tracking reject products <ul style="list-style-type: none"> Logs of all rejected products with time stamp, reject classification and device set-up parameters 	•	•			
Reject image upload <ul style="list-style-type: none"> Automatically saves images of all rejected products for x-ray and vision inspection devices 		•			
Alert messages to notify operators and supervisors <ul style="list-style-type: none"> Alerts can be sent via email or SMS to mobile devices Define the events which trigger the notification Define the users who should receive the alerts 		•			
Production data export <ul style="list-style-type: none"> Manual or automatic export of production data at final evaluation or at batch end as CSV or XML 		•			
Citrix Server installation for client monitors		•			

Optional Features

Report template designer (available from June 2018) <ul style="list-style-type: none"> Generation and printing of customer and site specific reports Supports the creation of internal reporting formats tailored to the specific needs 	Not available as option for Starter Pack	Only available as option for Base Pack			
100% individual value acquisition <ul style="list-style-type: none"> Allows big data analyses to find patterns and trends Traceability of products 					
OPC UA Server <ul style="list-style-type: none"> Makes production data for all connected devices available to an MES/ERP Use of PackML tags calculate production line OEE Supports Smart Factory (IIoT, Industry 4.0) initiatives and highly digitalizes production environments 					

*QM - Quality Manager, PM - Production Manager, IT - IT Manager

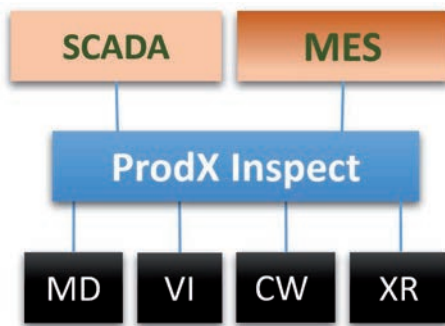
Connectivity



The ProdX model uses the Base installation with OPC UA server.

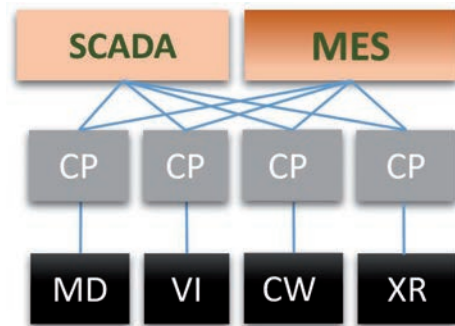
The typical ProdX installation model integrates seamlessly into enterprise network infrastructures.

Device Integration Comparison



With ProdX

- Each device is connected to ProdX using a single standard protocol
- ProdX only needs to be connected once
- New MT device connection is seamless
- All device data can be made available to the SCADA/MES
- OPC UA is the connectivity protocol of the future



Without ProdX

- Each device is separately connected to the network
- Each device may use different communication protocols (CP) depending on age and connectivity options
- Each device must be separately configured
- Data available to the SCADA/MES is limited

Supported Operating Systems

Windows 7, Pro Ultimate, Enterprise, 32 & 64Bit

Windows 10, Pro, Enterprise, 32 & 64Bit

Server 2008R2, Standard, Enterprise, 64Bit

Server 2012, Standard, Datacenter, 64Bit

Server 2012, R2 Standard, Datacenter, 64Bit

Server 2016, Standard, Datacenter, 64Bit

Supported SQL Server

SQL Server 2008R2, Express, Standard and Enterprise

SQL Server 2012, Express, Standard and Enterprise

SQL Server 2014, Express, Standard and Enterprise

SQL Server 2016, Express, Standard and Enterprise

ProdX keeps up-to-date with new IT environments and communication protocols.

Calculating the Value of Data Automation

Choosing new quality management software can be a big decision. With an ever-increasing need for quality improvements, it is imperative that the solution delivers a return on investment as soon as possible. There are many benefits to having effective quality management software in place. Some can be quantified, while some are more intangible which take place over time.

Before attempting to calculate the return on investment of ProdX, a performance benchmark needs to be established to document the costs of all the current production and quality data management processes.

Below are some indicators of key areas where process automation and digitalization can make a real difference.

Quantifiable Cost Factors	Value of ProdX	Saving Calculation (12 Months)
<p>Reduced defect management costs – caused by manual documentation of scrap and rework processes.</p> <p>Estimated potential saving in personnel costs: 11%</p>	<p>Paperless documentation of product reject incidents required for compliance. Save time filling in forms, filing and collation of information for reports and trend analysis.</p>	<p>(Hours spent on tasks x hourly rate)</p> <hr/> <p>11%</p>
<p>Reduced customer audit and compliance management costs – caused by manual collation and preparation of documents required for audits.</p> <p>Estimated potential savings: - In personal costs: 35% - In fines: 100%</p>	<p>Standard reports for compliance and retailer audits are instantly available in the correct format to reduce audit preparation time. Omits sources of error or missing data to prevent fines and time required to prepare for re-visits.</p>	<p>(Hours spent on tasks x hourly rate) + (Hours spent on re-visit prep x hourly rate)</p> <hr/> <p>35%</p> <p>+ Fines in past 12 months</p>
<p>Reduction of production costs – caused by time required to recognize negative production trends.</p> <p>Estimated potential savings: 5%</p>	<p>Automatic notifications triggered by pre-defined production events and trends to enable quick reaction for corrective action. Reduces product giveaway and unplanned downtime events.</p>	<p>Cost of X% giveaway + (Reaction time x hourly rate) + Cost of X% un-planned downtime</p> <hr/> <p>5%</p>
<p>Reduced time to access production critical data – caused by slow availability of data to all management levels.</p> <p>Estimated potential savings in personnel costs: 15%</p>	<p>All data on quality and production issues is instantly available at your workstation or on mobile devices. Responsible personnel have faster visibility of critical situations. Reduces time on reporting and solving issues.</p>	<p>(Hours spent on reporting tasks x hourly rate) + (Hours spent investigating issue x hourly rate)</p> <hr/> <p>15%</p>

Intangible Cost Factors

Complex manufacturers are faced with continually changing standards and regulations. Quality management software has the capability to manage quality and compliance issues across departments, process areas and locations as needed.

- **Visibility into overall operational performance for better decision making** – more effective and efficient management driven by real-time and historical data. All managerial levels have the information available to drive long-term business growth initiatives to react to evolving markets and customer demands
- **Complete traceability, trackability, and genealogy of every product** - provides the power and flexibility to create, record, query and manage traceability requirements to meet regulatory, quality and customer demands
- **Improved confidence and quality of products shipped** - ensure the quality of the products shipped is high and will go a long way in protecting and enhancing the overall reputation of your brand

With an effective system in place, employees can focus on high-value activities versus spending time on managing documents or processes.

Data Driven Improvements

Production and quality data management software can help companies create a competitive advantage through continual improvements and best-in-class quality management.

Next Steps

Contact your local METTLER TOLEDO office to:

- Receive more information on the features and how ProdX can help your business
- Organize a live demonstration of the software
- Install a 60 day test version to try out the software under real production conditions.

► www.mt.com/prodx



www.mt.com/pi

For more information

METTLER-TOLEDO Group

Product Inspection Division
Local contact: mt.com/contacts

Subject to technical changes
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